REMARKS

Claims 7, 8, 11, 21 and 22 have been canceled without prejudice or disclaimer. Claims 1, 16, 23, and 26-30 have been amended. Support for the amendments can be found at least at the previous claims, as well as the attached Declaration which is discussed in further detail below. Claims 16 and 23 have also been amended to correct typographical errors, and claim 30 has been amended to delete certain materials. No new matter has been added. With entry of the amendment, claims 1-6, 9, 10, 12-20 and 23-30 will be pending.

Amendments to the specification

The specification has been amended to delete materials that are not considered to be water-soluble, and therefore do not conform to the current claims. No new matter has been added.

Rejection under 35 U.S.C. § 103

Claims 1-6, 8-10, 12-21 and 23-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Application No. 2003/0134918 to Ko et al. ("Ko") in further view of "Emulsion Templating Using High Internal Phase Supercritical Fluid Emulsions" by Butler et al. in *Advanced Materials* ("Butler").

Ko discloses compositions and methods of making absorbent polymeric foams using super critical fluids. Ko at paragraph [0008]. The Examiner concedes that Ko does not expressly teach that the porous material is substantially free of cross-linking, but states that "Ko et al. teach that crosslinking materials are optional components (paragraph [0038])." Office Action at paragraph 18. The Examiner also concedes that Ko "does not expressly teach that (the) method for producing the porous materials comprises from 5-20% w/v of matrix building material, from 5-20% w/v surfactant in respect of water, and 65-95% CO_2." However, the Examiner contends that Butler teaches "CO_2-in-water emulsions comprising 70% to 80% CO_2, 10% w/v poly (vinyl alcohol) relative to water, and 1 to 10% surfactant w/v based on water." Office Action at paragraphs 19-20.

Applicants respectfully disagree with the Examiner's statements and submit that one of skill in the art, when considering Ko and Butler alone or in combination, would not have been motivated to produce the subject matter of the pending claims.

Claim 1, as amended, recites:

> 1. A method for producing a water-soluble porous, polymeric material comprising the steps of:

(a) providing a C/W emulsion comprising an aqueous phase, a matrix building material in the form of a water-soluble polymeric material, a surfactant and a liquid CO_2 phase;
(b) at least partially freezing the aqueous phase;
(c) gasifying CO_2 from the liquid CO_2 phase to produce an intermediate porous material;
(d) venting the gasified CO_2 from the intermediate porous material; and
(e) freeze drying the intermediate porous material at least substantially to remove the aqueous phase and to form the water-soluble porous material; wherein said water-soluble polymeric material is substantially free of cross-linking such that said water-soluble porous material is able to substantially fully dissolve in water at 20 °C in less than 107 seconds.

Applicants maintain that, as stated in previous responses, Ko is directed to absorbent composites. This is evident throughout the reference, including the title, summary, detailed description, examples and claims. Claim 1, in particular, recites "a method of making an absorbent foam . . . ." Products that may be absorbent are not merely preferred embodiments of the invention; they clearly **are** the invention. One of skill in the art would recognize that a material that may be used as an absorbent should not itself be water-soluble, as the pending claims require.

The Examiner has pointed out examples of monomers disclosed in Ko that may produce water-soluble polymers, as well as the fact that Ko teaches that cross-linking agents **may** be added (making them allegedly optional). Applicants respectfully submit, however, that one of skill in the art considering Ko *as a whole* at the time the present invention was made would have chosen a cross-linking agent, in choosing a monomer to produce a water-soluble polymer. One of skill in the art would have believed that a cross-linking agent would have been needed in order to generate a water-insoluble absorbent material. While Ko may not explicitly state that its foams must be insoluble, Applicants maintain that it would be clear to one of skill in the art that a water-soluble foam would not make an effective absorbent.

Nevertheless, the claims as amended require that the water-soluble porous, polymeric material is able to substantially fully dissolve in water at 20 °C in less than 107 seconds. Nothing in Ko or Butler, alone or in combination, teaches or suggests a material with such dissolution properties.

Submitted herewith is a Declaration of Dr. Steven Paul Rannard ("the Declaration"). Dr. Rannard is a co-founder and Chief Scientific Officer of Iota Nanosolutions, which is the real party in interest for the present application. Iota Nanosolutions is a spin-out company of Unilever, the assignee of record for the application (as Conopco, Inc. D/B/A Unilever). Dr.

Rannard was also formerly employed by Unilever. The present application will be formally assigned to Iota Nanosolutions in the near future.

As described in the Declaration, several of the methods described in the Examples of the present specification were repeated under Dr. Rannard's supervision, and the resulting products were subjected to experiments described in the Declaration in order to determine the dissolution properties of the materials described therein. As Dr. Rannard attests, "the emulsion-templated materials of Examples 7 and 15 fully dissolve (or at least substantially so, as determined by the human eye) more rapidly (in just 39 seconds and 53 seconds respectively) than the corresponding ice-templated (i.e. without use of CO_2) equivalents of Examples 2 and 3, which take 143 seconds (over 2 minutes) and 107 seconds (almost 2 minutes) to fully dissolve respectively." Declaration at paragraph 7.

As the experiments described in the Declaration were carried out on Examples described in the present specification, Applicants submit that the recitation of being "able to substantially fully dissolve in water at 20 °C in less than 107 seconds" is fully supported and adds no new matter. MPEP 2163.07(a) states the following:

> By disclosing in a patent application a device that inherently performs a function or has a property, operates according to a theory or has an advantage, a patent application necessarily discloses that function, theory or advantage, even though it says nothing explicit concerning it. The application may later be amended to recite the function, theory or advantage without introducing prohibited new matter. *In re Reynolds*, 443 F.2d 384, 170 USPQ 94 (CCPA 1971); *In re Smythe*, 480 F. 2d 1376, 178 USPQ 279 (CCPA 1973). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

Applicants submit that the extrinsic evidence, in the form of the Declaration, conclusively establishes that the claimed dissolution properties are inherent properties of the claimed compositions.

Ko does not disclose a composition that is "able to substantially fully dissolve in water at 20 °C in less than 107 seconds," as required by amended claim 1. Butler does not remedy this deficiency. Accordingly, claim 1 is not obvious over Ko in view of Butler. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are respectfully requested.

Claims 2-6, 9, 10, 12-21 and 23-25 depend either directly or ultimately from claim 1, and accordingly are allowable for at least the reasons set forth above and may be further patentable for additional reasons. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are respectfully requested.

Independent claim 26, as amended, recites:

26. A water-soluble porous material comprising a water-soluble polymeric matrix, which matrix comprises substantially no residual organic solvent, said porous material being able to substantially fully dissolve in water at 20 °C in less than 107 seconds.

For the same and similar reasons as those discussed above, Applicants submit that one of skill in the art, when considering Ko and Butler alone or in combination, would not have been motivated to produce the subject matter of claim 26. For example, Ko does not disclose a material that is "able to substantially fully dissolve in water at 20 °C in less than 107 seconds," as required by amended claim 26. Butler does not remedy this deficiency. Accordingly, claim 26 is not obvious over Ko in view of Butler. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are respectfully requested.

Claims 27-30 depend either directly or ultimately from claim 26, and accordingly are allowable for at least the reasons set forth above and may be further patentable for additional reasons. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are respectfully requested.

CONCLUSION

In view of the foregoing, Applicants submit that the claims are in condition for allowance. Favorable consideration of the present application as amended is therefore respectfully requested. If a conference call would be useful in resolving issues arising from the filing of this communication, please contact the undersigned at the below-noted number.

Respectfully submitted,

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